

REMARKS

I. Objections to the Disclosure

The disclosure was objected to for allegedly not containing a "Title of the Invention" nor section titles such as "Background of the Invention," "Field of the Invention," "Description of the Related Art," "Summary of the Invention," "Brief Description of the Drawings," and "Detailed Description of the Invention." Applicants thank Examiner for pointing out these informalities, which applicants submit have been duly corrected by the above amendments to the specification, with exception to inclusion of a "Title of the Invention." With regard to the "Title of the Invention," applicants assert that a "Title of the Invention" is present on page 1, line 1 of the application in accordance with 37 CFR § 1.72(a).

II. Rejection of Claims 1, 2, 6, 7 and 9-16 under 35 U.S.C. § 102(b)

Claims 1, 2, 6, 7, and 9-16 were rejected under 35 U.S.C. § 102(b) in the Office Action as being anticipated by U.S. Patent No. 4,392,009 issued to Napoli (hereinafter "Napoli"). Applicants respectfully disagree.

With reference to independent Claim 1, Claim 1 recites "a removable outer panel." Applicants respectfully submit that the panel 11 of Napoli is not removable from the side channels 13 and the end sections 16 once the module 10 is assembled. As is evident from Figure 1 of Napoli, once both end sections 16 have been urged into respective ends of the channels 13, the end sections 16 prevent the panel 11 from moving longitudinally or vertically in the flanges 14 and 15. Therefore, in order to remove the panel 11, it is necessary to remove one of the end sections 16.

At column 2, lines 55 to 58 of Napoli, it is stated that the compressive fit between the end sections 16 and the side channels 13 "allows for a firm interlocking at the end sections 16 with the side channels 13 to form a rigid, integral, easily-assembled frame." [emphasis added].

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Furthermore, at column 2, lines 65 to 68, it is stated that "[u]pon insertion of the tab 17 into hole 18, the edge 24 of the snap connector 25 becomes locked against edge 23 of hole 26, such that a secure interlock is formed by the mating end sections 13 and the side channels 16." [emphasis added] It is therefore clear that once the end sections are urged into position at the ends of the side channels 13 that there is no intention to allow said end sections to be removable therefrom and accordingly no intention that the panel 11 should be removable once the solar power module 10 has been assembled.

Applicants respectfully submit that those skilled in the art would immediately recognize that the panel 11 of the module 10 is not a "removable outer panel" as claimed by applicants. Moreover, the panel 11 can not readily be removed from an assembled module without damaging the electrical connection between the junction box 30 and the panel 11. Furthermore, when installed (on a roof) adjacent to a similar solar module, then neither panel 11 nor end piece 16 could be removed because they will be obstructed by such adjacent modules.

As is evident from lines 6 to 13 of page 1 of the application in suit, the illustrated embodiment of a solar panel formed in accordance with the present invention is removable so as to allow maintenance, and so such a panel must be readily remountable on the support structure from which it was removed. The module of Napoli does not teach or suggest the electrical connection formed between the junction box 30 and the panel 11 which is capable of being readily re-connectable if the panel 11 is removed from the assembled module 10.

Claim 1 further requires that "an electrical connection between the first electrical connector and the second electrical connector is achieved by bringing together the outer panel and the inner support structure." Figure 1 of Napoli shows an end section 16 being urged into the ends of the side channels 13, the end section 16 comprising a junction box 30 which is provided with an aperture 33. At column 3, lines 17 to 19, it is stated that "[t]hree electrical

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leads are, therefore, fed through aperture 33, as illustrated in Figure 2." At column 3, lines 24 to 26, it is stated that the "leads from the solar panel 11 may be potted or encapsulated to protect against moisture and corrosion, if so desired." Therefore, one is taught that electrical leads from the panel 11 are connected to the junction box 30 through the aperture 33 to make the electrical connection therebetween. This clearly indicates that the electrical connection is not achieved in the single step of pushing the end section 16 into the side channels 13. Rather, a further step of manually connecting the electrical leads of the solar panel 11 to the junction box is required. Therefore, the arrangement of the module 10 of Napoli is not such that in use an electrical connection between the panel 11 and the junction box 30 is achieved by bringing together the panel 11 and the junction box 30.

Under 35 U.S.C. § 102(b), a claim is anticipated only if each and every element, as set forth in the claims, is found in the cited and applied reference. *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1997). For at least the above reasons, applicants submit that all the elements of Claim 1 are not taught by Napoli. Accordingly, applicants respectfully request that the Examiner withdraw the 35 U.S.C. § 102(b) rejection of Claim 1. Claims 2, 6, 7, and 9-13 depend from independent Claim 1. Therefore, for at least the reasons argued above for Claim 1, dependent Claims 2, 6, 7, and 9-13 are not anticipated by Napoli.

Regarding independent Claim 14, Claim 14 includes the features of "a removable solar tile" and an electrical connection which is achieved "by bringing together the removable solar tile and the inner support structure." Claim 14 is therefore also novel over Napoli at least for the same reasons argued above for Claim 1.

Regarding independent Claim 15, Claim 15 relates to an inner support structure for a removable tile. In view of the discussion above, and in particular relating to the electrical connection made between the junction box 30 and the leads of the panel 11, Napoli does not

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teach or suggest a junction box intended or suitable for interfacing with a removable solar panel. Furthermore, Claim 15 specifies that the connection between the inner support structure and the removable tile is achieved by bringing those components together. As discussed above with regard to Claim 1, Napoli does not teach or suggest a solar tile assembly which is adapted to so function. Napoli only implies that the electrical connection is achieved by a second, manual operation.

Regarding independent Claim 16, Claim 16 relates to a method for providing an electrical connection for a solar tile and includes the step of sliding the outer panel toward the inner support structure until an electrical connection is made therebetween. Conversely, in Napoli, there is no disclosure of the panel 11 being slid toward the junction box 30 to make an electrical connection. Rather, Napoli discloses urging the end section 16 (and thus the junction box 30) toward the panel 11 and then performing a further step of connecting the junction box 30 to the panel 11.

To summarize, the distinction between the disclosure of Napoli and the scope of the independent claims of the application in suit may be stated as follows: The object of the invention of Napoli is to improve mass-production techniques for the manufacture of solar modules and that, once employed, these techniques are intended to be generally irreversible. As is clear from the above arguments and the application in suit, a principal object of the invention of said application concerns the installation of a solar module (on a roof) where, if necessary, the solar panel may be removed and re-assembled any number of times. This distinction is exemplified by mention of the possibility of encapsulation at column 3, lines 24-26 of Napoli, encapsulation being an irreversible process.

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III. Rejection of Claim 8 under 35 U.S.C. § 103(a)

Claim 8, which depends from Claim 1, was rejected under 35 U.S.C. § 103(a) as being unpatentable over Napoli in light of the knowledge of one ordinary skilled in the art. Applicants respectfully disagree. Applicants agree with the Examiner that Napoli does not disclose the solar assembly which is attached to the outer surface of the structure such as a building, or independent support structure inside or outside the building. Applicants further submit that Napoli does not teach "a removable outer panel" or "an electrical connection between the first electrical connector and the second electrical connector is achieved by bringing together the outer panel and the inner support structure" as recited in Claim 1 from which Claim 8 depends, as argued above.

Inasmuch as all elements of Claim 8 are not taught or suggested by Napoli in light of the knowledge of one skilled in the art, applicants submit that the rejection of Claim 8 should be withdrawn.

CONCLUSION

In view of the foregoing remarks and amendments, applicants respectfully submit that the present application is in condition for allowance. Reconsideration and reexamination of the application, as amended, and allowance of the claims at an early date is solicited. If the

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Examiner has any questions or comments concerning this matter, the Examiner is invited to contact applicants' undersigned attorney at the number below.

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below date.

Date: 5/28/03

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A solar tile assembly comprising a removable outer panel ~~(1)~~ that comprises photovoltaic means ~~(3)~~ and a first electrical connector ~~(19a)~~, and an inner support structure ~~(2)~~ that comprises a second electrical connector ~~(13)~~, the arrangement being such that in use an electrical connection between the first electrical connector ~~(19a)~~ and the second electrical connector ~~(13)~~ is achieved by bringing together the outer panel ~~(1)~~ and the inner support structure ~~(2)~~.

2. (Original) A solar tile assembly as claimed in Claim 1, wherein the electrical connection between the first electrical connector and the second electrical connector is broken by the removal of the outer panel from the inner support structure.

3. (Currently Amended) A solar tile assembly as claimed in Claim 1 or Claim 2, wherein the outer panel is slidably attached to the inner support structure by attachment means comprising a channel section ~~(10)~~ formed to receive an attachment element ~~(17a, 17b)~~.

4. (Currently Amended) A solar tile assembly as claimed in Claim 3, wherein the outer panel ~~(2)~~ comprises the attachment element ~~(17a, 17b)~~ and the inner support structure is formed with the channel ~~(10)~~ for receiving and retaining the attachment element of the outer panel.

5. (Currently Amended) A solar tile assembly as claimed in Claim 3, wherein the outer panel comprises a pair of attachment elements ~~(17a, 17b)~~ and the inner support structure is formed with a pair of channels ~~(10)~~ for receiving and retaining the attachment elements of the outer panel.

6. (Original) A solar tile assembly as claimed in Claim 1, wherein the electrical connection between the first electrical connector and the second electrical connector is broken by

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sliding the outer panel in a direction that is substantially parallel to plane of outermost surface of the outer panel.

7. (Currently Amended) A solar tile assembly as claimed in ~~any one of claims 1 to 6~~ Claim 1, wherein the outer panel is removed from the inner support structure, by first sliding the outer panel in a direction that is substantially parallel to plane of the outermost surface of the outer panel and then lifting the outer panel in a direction perpendicular to the direction of the slide direction.

8. (Currently Amended) A solar tile assembly as claimed in ~~any one of the preceding claims~~ Claim 1, wherein, in use, the inner support structure can be attached to the outer surface of a structure such as a building or attached to an independent support structure inside or outside a building.

9. (Currently Amended) A solar tile assembly as claimed in ~~any one of the preceding claims~~ Claim 1, wherein the inner support structure comprises an electrical junction box (7) that comprises the second electrical connector (13).

10. (Currently Amended) A solar tile assembly as claimed in Claim 9, wherein the electrical junction box of the inner support structure comprises an electrical input terminal (15) and an electrical output terminal (14), the arrangement being such that the electrical input terminal and the electrical output terminal provide electrical communication between corresponding solar tile assemblies.

11. (Original) A solar tile assembly as claimed in Claim 9 or Claim 10, wherein the outer panel comprises an electrical junction box formed with the first electrical connector, the arrangement being such that in the assembled state of the solar tile assembly the first connector and the second connector provide electrical communication between the two electrical junction boxes.

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12. (Currently Amended) A solar tile assembly as claimed in ~~any one of the preceding claims~~ Claim 1, wherein the support structure comprises means ~~(16)~~ for providing electrical connections between adjacent solar tile assemblies.

13. (Currently Amended) A solar tile assembly as claimed in Claim 12, wherein the means for providing electrical connections between adjacent solar the assemblies comprises an electrical connector ~~(16)~~ on opposite sides of the support structure.

14. (Currently Amended) A removable solar tile comprising photovoltaic means ~~(3)~~ and an electrical connector ~~(19a)~~, the arrangement being such that in use an electrical connection between the electrical connector of the removable solar tile and a second electrical connector ~~(13)~~ of an inner support structure ~~(12)~~ is achieved by bringing together the ~~outer panel~~ removable solar tile and the inner support structure.

15. (Currently Amended) An inner support structure for a removable tile that comprises photovoltaic means, the inner support structure comprising an electrical connector ~~(13)~~, the arrangement being such that in use an electrical connection between the electrical connector ~~(13)~~ of the inner support structure and an electrical connector ~~(19a)~~ of the removable tile ~~(1)~~ is achieved by bringing together the removable tile and the inner support structure.

16. (Currently Amended) A method for providing an electrical connection for a solar tile assembly comprising a removable outer panel ~~(1)~~ that comprises photovoltaic means ~~(3)~~ and a first electrical connector ~~(19a)~~, and an inner support structure ~~(2)~~ that comprises a second electrical connector ~~(13)~~, the method comprising sliding the outer panel towards the inner support structure in a direction substantially parallel to the plane of the outer panel until the first electrical connector ~~(19a)~~ contacts the second electrical connector ~~(13)~~.